IN THE CLAIMS

Please amend the claims as shown below:

1. (Currently Amended) A communication network, comprising:

a plurality of nodes, adjacent ones of said nodes being coupled together through first optical fibers that form first communication paths and second optical fibers that form second communication paths, each node comprising:

a plurality of switches, including a first switch and a second switch, each having at least one first terminal that includes an input and an output, at least one second terminal that includes an input and an output, at least one third terminal, and at least one fourth terminal, wherein the input and output of the first terminal ~~and the second terminal~~ of said first switch are coupled through first and second ones of the ~~plural~~ first optical fibers forming first communication paths, and the input and output of the second terminal of said first switch are coupled through third and fourth ones of the ~~plural~~ second optical fibers forming second communication paths~~, respectively~~, to a first, adjacent one of the nodes, the input and output of the first terminal ~~and the second terminal~~ of said second switch are coupled through first and second ones of ~~plural~~ other first optical fibers forming other first communication paths, and the input and output of the second terminal of said second switch are coupled through third and fourth ones of the ~~plural~~ other second optical fibers forming other second communication paths~~, respectively~~, to a second, adjacent one

of the nodes, and the third terminal of said first switch is coupled to the third terminal of said second switch through at least one third communication path;

at least one multiplexing/demultiplexing device bidirectionally coupled to each of an external communication node and the fourth terminal of each first and second switch, said at least one multiplexing/demultiplexing device for forwarding signals being communicated between the fourth terminals of said first and second switches, and for forwarding signals being communicated between the external communication node and the fourth terminal of respective ones of said first and second switches; and

at least one controller coupled to said first and second switches, said at least one controller being responsive to applied input information for controlling at least one of said first and second switches to cause that at least one switch to selectively couple at least one of (a) the first and second adjacent nodes together by way of at least one of the first and second communication paths coupled to that at least one switch, and (b) the external communication node and at least one of the first and second, adjacent nodes by way of at least one of the first and second communication paths coupled to that at least one switch,

wherein the first switch and the second switch are each NxN switches, where N is at least 4, each first communication path is a working path, each second communication path is a protect path, an end of each first optical fiber and an end of each second optical fiber is attached to the first switch, an end of each other first optical fiber and an end of each other second optical fiber is attached to the second switch, and the

first optical fibers, the second optical fibers, the other first optical fibers, and the other second optical fibers, are each, at least in part, external to the node.

2. (Canceled)

3. (Original) A communication network as set forth in Claim 1, wherein said at least one multiplexing/demultiplexing device is a Wavelength- Division-Multiplexed (WDM) device.

4. (Original) A communication network as set forth in Claim 1, wherein said at least one multiplexing/demultiplexing device includes at least one add/drop multiplexer/demultiplexer.

5. (Previously Presented) A communication network, comprising:

a plurality of first communication paths;

a plurality of second communication paths; and

a plurality of nodes, adjacent ones of said nodes being coupled together through said first communication paths and said second communication paths, each node comprising:

a plurality of switches, including a first switch and a second switch, each having at least one first terminal, at least one second terminal, at least one third

terminal, and at least one fourth terminal, wherein the first terminal and the second terminal of said first switch are coupled through plural first communication paths and plural second communication paths, respectively, to a first, adjacent one of the nodes, the first terminal and the second terminal of said second switch are coupled through plural other first communication paths and plural other second communication paths, respectively, to a second, adjacent one of the nodes, and the third terminal of said first switch is coupled to the third terminal of said second switch through at least one third communication path;

at least one multiplexing/demultiplexing device bidirectionally coupled to each of an external communication node and the fourth terminal of each first and second switch, said at least one multiplexing/demultiplexing device for forwarding signals being communicated between the fourth terminals of said first and second switches, and for forwarding signals being communicated between the external communication node and the fourth terminal of respective ones of said first and second switches; and

at least one controller coupled to said first and second switches, said at least one controller being responsive to applied input information for controlling at least one of said first and second switches to cause that at least one switch to selectively couple at least one of (a) the first and second adjacent nodes together by way of at least one of the first and second communication paths coupled to that at least one switch, and (b) the external communication node and at least one of the first and second, adjacent nodes by

way of at least one of the first and second communication paths coupled to that at least one switch,

wherein each first communication path is a working path and each second communication path is a protect path,

wherein said at least one multiplexing/demultiplexing device comprises

a plurality of multiplexers, a first one of said multiplexers having a first input coupled to a first output of said external communication node, and an output coupled to the fourth terminal of said first switch, a second one of said multiplexers having a first input coupled to a second output of the external communication node, and an output coupled to the fourth terminal of said second switch, and

a plurality of demultiplexers, a first one of said demultiplexers having a first input coupled to the fourth terminal of said first switch, a first output coupled to a first input of the external communication node, and a second output coupled to a second input of said second multiplexer, a second one of said demultiplexers having a first input coupled to the fourth terminal of said second switch, a first output coupled to a second input of the external communication node, and a second output coupled to a second input of said first multiplexer, and

wherein each of said first and second multiplexers couples individual signals received through the first and second inputs thereof to the output of that

multiplexer, and each of said first and second demultiplexers couples signals applied to the input thereof to corresponding ones of the first and second outputs of that demultiplexer.

6. (Previously Presented) A communication network as set forth in Claim 5, wherein each node further comprises:

at least one first transponder interposed between both said first multiplexer and the external communication node and between said first demultiplexer and the external communication node, said at least one first transponder having a first input coupled to the first output of the external communication node, a second input coupled to the first output of said first demultiplexer, a first output coupled to the first input of said first multiplexer, and a second output coupled to the first input of the external communication node; and

at least one second transponder interposed between both said second multiplexer and the external communication node and between said second demultiplexer and the external communication node, said at least one second transponder having a first input coupled to the second output of the external communication node, a second input coupled to the first output of said second demultiplexer, a first output coupled to the first input of said second multiplexer, and a second output coupled to the second input of the external communication node.

7. (Previously Presented) A communication network as set forth in Claim 6, further comprising:

a first amplifier interposed between the output of said first multiplexer and the fourth terminal of said first switch;

a second amplifier interposed between the fourth terminal of said first switch and the input of said first demultiplexer;

a third amplifier interposed between the output of said second multiplexer and the fourth terminal of said second switch; and

a fourth amplifier interposed between the fourth terminal of said second switch and the input of said second demultiplexer.

8. (Previously Presented) A communication network as set forth in Claim 5, further comprising:

a first variable optical attenuator interposed between the fourth terminal of said first switch and the input of said first demultiplexer; and

a second variable optical attenuator interposed between the fourth terminal of said second switch and the input of said second demultiplexer.

9. (Previously Presented) A communication network as set forth in Claim 5, wherein said first multiplexer and said first demultiplexer are both included

within a first optical line terminal, and wherein said second multiplexer and said second demultiplexer are both included within a second optical line terminal.

10. (Original) A communication network as set forth in Claim 1, wherein the first terminal of each of said first and second switches is normally coupled within the switch to the fourth terminal of that switch and the second terminal of each of said first and second switches is normally coupled within the switch to the third terminal of that switch, and wherein said at least one controller is responsive to applied input information indicating that a failure has occurred in a first communication path for controlling at least one of said first and second switches to cause the first terminal of that at least one switch to be coupled to the third terminal of that switch, and to cause the second terminal of that at least one switch to be coupled to the fourth terminal of that switch, for coupling the at least one second communication path coupled to that second terminal to said at least one multiplexing/demultiplexing device.

11. (Previously Presented) A communication network as set forth in Claim 10, wherein said at least one controller is responsive to further applied input information for controlling the at least one of said first and second switches to cause the first terminal of that at least one switch to be coupled to the fourth terminal of that switch, and to cause the second terminal of that at least one switch to be coupled to the third

terminal of that switch, for coupling at least one of the first communication paths coupled to that first terminal to said at least one multiplexing/demultiplexing device.

12. (Original) A communication network as set forth in Claim 1, wherein said at least one controller is responsive to applied input information indicating that a failure has occurred in at least one of said first and second communication paths for controlling one of said first and second switches of said node to cause the third terminal of that switch to be coupled to the fourth terminal of that switch, for coupling said multiplexing/demultiplexing device through that switch, the third communication path, and the other switch of said node, to the second communication path coupled to that other switch.

13. (Previously Presented) A communication network as set forth in Claim 1, wherein each node further comprises at least one monitor, coupled to said at least one controller, for detecting the occurrence of a failure in at least one of said first and second communication paths, and wherein said at least one monitor responds to detecting a failure in that at least one communication path by applying the input information to said at least one controller.

14. (Original) A communication network as set forth in Claim 13, wherein said at least one monitor detects the occurrence of a failure in the at least one communication path by detecting the substantial absence of light in that path.

15. (Original) A communication network as set forth in Claim 13, wherein said at least one controller is coupled to at least one of the other nodes of the communication network through at least one of said first and second communication paths, and wherein said at least one controller is responsive to the input information being applied thereto by the at least one monitor for notifying the at least one other node of the detected failure by way of that at least one communication path.

16. (Original) A communication network as set forth in Claim 13, wherein said at least one controller is coupled to at least one of the other nodes of the communication network through at least one of said first and second communication paths, and wherein the input information applied to the at least one controller is provided from the at least one other node by way of that at least one communication path.

17. (Original) A communication network as set forth in Claim 13, wherein said plurality of nodes are coupled together through said first and second communication paths, and form a loop configuration.

18.- .50 (Canceled)

51. (Currently Amended) A node operating in a communication network having a plurality of nodes that are coupled together through first and second communication paths, said node comprising:

a first switch having at least a first terminal that includes an input and an output coupled to a first adjacent one of the nodes through ~~respective plural~~ first and second ones, respectively, of first optical fibers forming the first communication paths, and also having at least a second terminal that includes an input and an output coupled to the first adjacent node through ~~respective plural~~ third and fourth ones, respectively, of second optical fibers forming the second communication paths, said first switch also having a third terminal and a fourth terminal;

a second switch having at least a first terminal that includes an input and an output coupled to a second adjacent one of the nodes through ~~respective plural~~ first and second ones, respectively, of other first optical fibers forming other first communication paths, at least a second terminal that includes an input and an output coupled to that second adjacent node through ~~respective plural~~ third and fourth ones, respectively, of other second optical fibers forming other second communication paths, a third terminal, and a fourth terminal, wherein the third terminal of said second switch is coupled to the third terminal of said first switch through at least one third communication path;

at least one multiplexing/demultiplexing device bidirectionally coupled to each of an external communication node and the fourth terminal of each first and second switch, said at least one multiplexing/demultiplexing device for forwarding signals being communicated between the fourth terminals of said first and second switches, and for forwarding signals being communicated between the external communication node and the fourth terminal of respective ones of said first and second switches; and

at least one controller coupled to said first and second switches, said at least one controller being responsive to applied input information for controlling at least one of said first and second switches to cause that at least one switch to selectively couple at least one of (a) the first and second adjacent nodes together by way of at least one of the first and second communication paths, and (b) the external communication node and at least one of the first and second adjacent nodes by way of at least one of the first and second communication paths coupled to that at least one switch,

wherein each first and second switch is a NxN switch, where N is at least 4, each first communication path is a working path, each second communication path is a protect path, the plural first optical fibers and the plural second optical fibers extend between the first switch and the first adjacent node, the plural other first optical fibers and the plural other second optical fibers extend between the second switch and the second adjacent node, an end of each first optical fiber and an end of each second optical fiber is attached to the first switch, and an end of each other first optical fiber and an end of each other second optical fiber is attached to the second switch.

52. (Original) A node as set forth in Claim 51, wherein said at least one multiplexing/demultiplexing device is a Wavelength-Division-Multiplexed (WDM) device.

53. (Currently Amended) A node, operating in a communication network having a plurality of nodes that are coupled together through first and second communication paths, said node comprising:

a first switch having at least a first terminal that includes an input and an output coupled to a first adjacent one of the nodes through a first optical fiber and a second optical fiber, respectively, forming ~~plural~~ first communication paths, and at least a second terminal that includes an input and an output coupled to the first adjacent node through a third optical fiber and a fourth optical fiber, respectively, forming ~~plural~~ second communication paths, said first switch also having a third terminal and a fourth terminal;

a second switch having at least a first terminal that includes an input and an output coupled to a second adjacent one of the nodes through a first optical fiber and a second optical fiber, respectively, forming ~~plural~~ other first communication paths, at least a second terminal that includes an input and an output coupled to that second adjacent node through a third optical fiber and a fourth optical fiber, respectively, forming ~~plural~~ other second communication paths, a third terminal, and a fourth terminal, wherein the third terminal of said second switch is coupled to the third terminal of said first switch through at least one third communication path;

at least one multiplexing/demultiplexing device bidirectionally coupled to each of an external communication node and the fourth terminal of each first and second switch, said at least one multiplexing/demultiplexing device for forwarding signals being communicated between the fourth terminals of said first and second switches, and for forwarding signals being communicated between the external communication node and the fourth terminal of respective ones of said first and second switches; and

at least one controller coupled to said first and second switches, said at least one controller being responsive to applied input information for controlling at least one of said first and second switches to cause that at least one switch to selectively couple at least one of (a) the first and second adjacent nodes together by way of at least one of the first and second communication paths, and (b) the external communication node and at least one of the first and second adjacent nodes by way of at least one of the first and second communication paths coupled to that at least one switch,

wherein each first and second switch is a NxN switch, where N is at least 4, and each first communication path is a working path and each second communication path is a protect path,

wherein said at least one multiplexing/demultiplexing device comprises

a plurality of multiplexers, a first one of said multiplexers having a first input coupled to a first output of said external communication node, and an output coupled to the fourth terminal of said first switch, a second one of said multiplexers

having a first input coupled to a second output of the external communication node, and an output coupled to the fourth terminal of said second switch, and

a plurality of demultiplexers, a first one of said demultiplexers having an input coupled to the fourth terminal of said first switch, a first output coupled to a first input of the external communication node, and a second output coupled to a second input of said second multiplexer, a second one of said demultiplexers having a first input coupled to the fourth terminal of said second switch, a first output coupled to a second input of the external communication node, and a second output coupled to a second input of said first multiplexer, and

wherein each of said first and second multiplexers couples individual signals received through the first and second inputs thereof to the output of that multiplexer, and each of said first and second demultiplexers couples signals applied to the input thereof to corresponding ones of the first and second outputs of that demultiplexer.

54. (Original) A node as set forth in Claim 51, wherein the first terminal of each of said first and second switches is normally coupled in the switch to the fourth terminal of that switch and the second terminal of each of said first and second switches is normally coupled in that switch to the third terminal of that switch, and wherein said at least one controller is responsive to applied input information indicating that a failure has occurred in at least one first communication path for controlling at least one of said first and second switches to cause the first terminal of that at least one switch to be

coupled to the third terminal of that switch, and to cause the second terminal of that at least one switch to be coupled to the fourth terminal of that switch, for coupling the at least one second communication path coupled to that second terminal to said at least one multiplexing/demultiplexing device.

55. (Original) A node as set forth in Claim 51, wherein said at least one controller is responsive to applied input information indicating that a failure has occurred in at least one of said first and second communication paths for controlling one of said first and second switches of said node to cause the third terminal of that switch to be coupled to the fourth terminal of that switch, for coupling said multiplexing/demultiplexing device through that switch, the third communication path, and the other switch of said node, to the second communication path coupled to that other switch.

56. (Original) A node as set forth in Claim 51, further comprising at least one monitor for detecting the occurrence of a failure in at least one of said first and second communication paths, and wherein said at least one monitor is responsive to detecting a failure in that at least one communication path by applying the input information to said at least one controller.

57. (Original) A node as set forth in Claim 56, wherein said at least one controller is responsive to the input information applied thereto by the at least one monitor

for notifying at least one of said adjacent nodes of the detected failure by way of that communication path.

58. (Original) A node as set forth in Claim 51, wherein said at least one controller is coupled to at least one of the first and second adjacent nodes through at least one of said first and second communication paths, and wherein the input information applied to the at least one controller is provided from at least one of those nodes by way of that at least one communication path.

59. - .71 (Canceled)

72. (Currently Amended) A communication network, comprising:

plural first optical fibers and plural second optical fibers forming at least one communication path;

a plurality of nodes coupled in said at least one communication path, each node comprising:

at least one multiplexer/demultiplexer device coupled to a corresponding external terminal, and

a plurality of separate NxN switches, where N is at least 4, said switches being controllable for selectively coupling signals between said multiplexer/demultiplexer device and said at least one communication path, and for

selectively coupling signals through said node to and from said at least one communication path, without forwarding those signals through said multiplexer/demultiplexer device,

wherein the plural first optical fibers form at least two working paths and the plural second optical fibers form at least two protect paths, ~~and~~ a first input and a first output at least one of the switches of at least one of the nodes [[is]] are coupled to at least one of the switches of at least one other of the nodes through first and second ones, respectively, of the plural first optical fibers, a second input and a second output of the at least one switch of the at least one node are coupled to the at least one of the switches of the at least one other node through third and fourth ones, respectively, of [[and]] the plural second optical fibers ~~that~~ extend, at least in part, externally to at least one of the nodes, each of the ~~first and second~~ first, second, third, and fourth optical fibers having an end attached to the at least one switch of one of those nodes.

73. (Previously Presented) A communication network as set forth in Claim 72, wherein each node also comprises at least one controller, said at least one controller of at least one of said nodes is responsive to applied input information indicating that a failure has occurred in at least one of the communication paths for controlling at least one of said switches of that node to enable signals to be exchanged between at least one other, selected one of the communication paths and the multiplexing/demultiplexing device of that node by way of that at least one switch.

74. (Original) A communication network as set forth in Claim 73, wherein in a case in which the switches in first and second ones of the nodes are controlled for enabling signals to be exchanged with the at least one other, selected communication path, those signals also are exchanged between those first and second nodes by way of that at least one other, selected communication path.

75. (Previously Presented) A communication network as set forth in Claim 74, wherein a third one of the nodes is interposed in the at least one communication path between one side of the first node and one side of the second node, and wherein said controller of the first node controls at least one of said switches of the first node and said controller of the second node controls at least one of said switches of the second node to provide a loopback switching arrangement for enabling signals to be exchanged between the first and second nodes through the third node.

76. (Currently Amended) A line node, comprising:

at least one controller;

at least one multiplexing/demultiplexing device coupled to an external terminal; and

a plurality of separate NxN switches, controllable by said at least one controller, for selectively coupling signals between said at least one multiplexing/demultiplexing device and plural first optical fibers and plural second optical

fibers forming at least one external communication path, and for selectively coupling signals through said line node to and from the at least one external communication path, without forwarding those signals through said at least one multiplexing/demultiplexing device, where N is at least 4,

wherein the plural first optical fibers form at least two working communication paths and the plural second optical fibers form at least two protect communication paths, a first input and a first output of at least one of the switches [[is]] are ~~attached to and~~ coupled to [[an]] ends of ~~each of~~ a first one and a second one, respectively, of the plural first optical fibers, and a second input and a second output of the at least one switch are coupled to ends of a third one and a fourth one, respectively, of the plural second optical fibers, and the plural first optical fibers and the plural second optical fibers are external to said line node.

77. (Currently Amended) A method for operating a communication network that includes a plurality of nodes coupled together through plural first optical fibers and plural second optical fibers forming communication paths, the nodes exchanging signals with one another through at least one of the communication paths, the method comprising:

detecting a failure in at least one of the communication paths; and

in response to the detecting, controlling at least one of a plurality of separate NxN switches in at least one of the nodes to enable the signals to be exchanged

between at least two of the nodes through at least one other of the communication paths, where N is at least 4,

wherein the plural first optical fibers form at least two working communication paths and the plural second optical fibers form at least two protect communication paths, a first input and a first output of at least one of the switches of the at least one node [[is]] are coupled to at least one of the switches of at least one other of the nodes through a first one and a second one, respectively, of the plural first optical fibers, and a second input and a second output of the at least one switch of the at least one node are coupled to the at least one switch of the at least one other node through a third one and a fourth one, respectively, of [[and]] the plural second optical fibers, and the plural first optical fibers and the plural second optical fibers are external to the at least one node and each have an end attached to the at least one switch of the at least one node.

78. (Original) A method as set forth in Claim 77, further comprising the step of multiplexing at least some of the signals within at least one of the nodes.

79. (Original) A method as set forth in Claim 77, further comprising the step of demultiplexing at least some of the signals within at least one of the nodes.

80. (Original) A method as set forth in Claim 77, wherein the controlling step is performed to loopback signals from a first node to a second node through a third node interposed between the first and second nodes.

81. (Original) A method as set forth in Claim 77, wherein the nodes and the at least one communication path collectively form a loop configuration.

82. (Currently Amended) A method for operating a line node of a communication network, the line node being coupled to an external communication terminal and also being coupled to at least one other line node through plural first optical fibers and plural second optical fibers forming a plurality of communication paths, the method comprising:

detecting a failure in at least one of the communication paths; and

in response to the detecting, controlling at least one of a plurality of separate NxN switches in the line node to cause that at least one switch to selectively couple signals between the external communication terminal and at least one other of the communication paths coupled to the line node, for enabling those signals to be selectively communicated between the external terminal and at least one other line node of the communication network, where N is at least 4,

wherein the plural first optical fibers form working communication paths and the plural second optical fibers form protect communication paths, a first input

and a first output of at least one of the switches is ~~attached and~~ coupled to an end of a first one and a second one, respectively, ~~each~~ of the plural first optical fibers, and a second input and a second output of the at least one switch is coupled to an end of ~~each~~ of a third one and a fourth one, respectively, of the plural second optical fibers, and the plural first optical fibers and the plural second optical fibers are external to the line node.

83. (Previously Presented) A method as set forth in Claim 82, wherein the line node comprises a multiplexing/demultiplexing device interposed between the external communication device and the plurality of switches.

84. (Currently Amended) A computer readable storage medium storing a program which, when executed, performs a method for operating a line node of a communication network, the line node being coupled to an external terminal and also being coupled to at least one other line node through plural first optical fibers and plural second optical fibers forming a plurality of communication paths, the method comprising:

detecting a failure in at least one of the communication paths; and

in response to the detecting, controlling at least one of a plurality of separate NxN switches in the line node to cause that at least one switch to selectively couple signals between the external terminal and at least one other of the communication paths coupled to the line node, for enabling those signals to be selectively communicated

between the external terminal and at least one other line node of the communication network, where N is at least 4,

wherein the plural first optical fibers form working communication paths and the plural second optical fibers form protect communication paths, a first input and a first output of at least one of the switches is ~~attached and~~ coupled to an end of a first one and a second one, respectively, ~~each~~ of the plural first optical fibers, and a second input and a second output of the at least one switch is coupled to an end of ~~each~~ of a third one and a fourth one, respectively, of the plural second optical fibers, and the plural first optical fibers and the plural second optical fibers are external to the line node.

85. (Previously Presented) A method as set forth in Claim 77, wherein the detecting includes:

at a first one of the nodes, detecting a failure in a first one of the communication paths, and communicating a first failure notification to a second, adjacent one of the nodes through at least a third one of the communication paths coupled to those first and second nodes; and

at the second, adjacent node, detecting a failure in a second one of the communication paths, and communicating a second failure notification to the first node through the at least third one of the communication paths, and wherein the controlling step includes:

in response to the first node receiving the second failure notification, controlling at least one of a plurality of switches in the first node to enable the signals to be exchanged between the first node and the at least one other of the communication paths ; and

in response to the second node receiving the first failure notification, controlling at least one of a plurality of switches in the second node to enable the signals to be exchanged between the first and second nodes through the at least one other communication path.

86. (Original) A node as set forth in Claim 55, wherein said at least one controller is responsive to applied input information indicating that the at least one of said first and second communication paths in which the failure occurred has been restored for controlling said one of said first and second switches of said node to cause the first terminal of that switch to be coupled to the fourth terminal of that switch, for coupling said multiplexing/demultiplexing device through that switch to the first communication path coupled to that switch, and to cause the second terminal of that switch to be coupled to the third terminal of that switch.

87. (Canceled)

88. (Previously Presented) A communication network as set forth in Claim 72, wherein said multiplexer/demultiplexer device is a Wavelength-Division-Multiplexed (WDM) device.

89. (Previously Presented) A communication network as set forth in Claim 72, wherein each node also comprises at least one amplifier coupled between said multiplexer/demultiplexer device and at least one of said switches.

90. (Previously Presented) A communication network as set forth in Claim 89, wherein each node also comprises at least one variable optical attenuator interposed between the at least one of said switches and said amplifier.

91. (Canceled)

92. (Previously Presented) A line node as set forth in Claim 76, wherein said multiplexing/demultiplexing device is a Wavelength-Division-Multiplexed (WDM) device.

93. (Previously Presented) A line node as set forth in Claim 76, further comprising at least one amplifier coupled between said multiplexing/demultiplexing device and at least one of said switches.

94. (Previously Presented) A line node as set forth in Claim 93, further comprising at least one variable optical attenuator interposed between the at least one of said switches and said amplifier.

95. (Canceled)

96. (Previously Presented) A method as set forth in Claim 77, further comprising:

detecting removal of the failure in the at least one of the communication paths; and

controlling the at least one of the plurality of separate NxN switches in the at least one of the nodes to enable the signals to be exchanged between the at least two nodes through the at least one communication path.

97. (Canceled)

98. (Previously Presented) A method as set forth in Claim 82, further comprising:

detecting removal of the failure in the at least one of the communication paths; and

controlling the at least one of the plurality of separate NxN switches in the line node to enable the signals to be communicated between the external communication terminal and the at least one other line node through the at least one communication path.

99. (Canceled)

100. (Previously Presented) A computer readable storage medium as set forth in Claim 84, wherein the method further comprises:

detecting removal of the failure in the at least one of the communication paths; and

controlling the at least one of the plurality of separate NxN switches in the line node to enable the signals to be communicated between the external communication terminal and the at least one other line node through the at least one communication path.

101. (Previously Presented) A computer readable storage medium as set forth in Claim 84, wherein the method further comprises notifying the at least one other line node of the failure detected in the detecting.